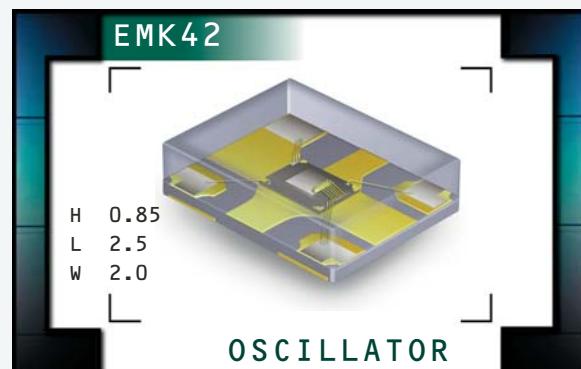


# EMK42 Series



ECLIPTEK®  
CORPORATION

- MEMS First™ Resonator Technology
- RoHS Compliant (Pb-Free)
- 2.0mm x 2.5mm Surface Mount Package
- LVHCMOS Output
- 2.5V Supply Voltage
- Stability to  $\pm 50\text{ppm}$
- 30,000 G Shock Resistance
- Available on Tape & Reel
- Tri-State and Power Down Options



## ELECTRICAL SPECIFICATIONS

<b>Nominal Frequency</b>	1.000MHz to 125MHz	
<b>Operating Temperature Range</b>	-40°C to 85°C	
<b>Storage Temperature Range</b>	-55°C to 125°C	
<b>Supply Voltage (<math>V_{DD}</math>)</b>	2.5V <sub>DC</sub> $\pm 5\%$	
<b>Input Current</b>	$\leq 25.000\text{MHz}$	17mA Maximum
	$> 25.000\text{MHz}$	20mA Maximum
<b>Frequency Tolerance / Stability</b>	Inclusive of All Conditions: Calibration Tolerance at 25°C, Frequency Stability over the Operating Temperature Range, Supply Voltage Change, Output Load Change, 1st Year Aging at 25°C, 260°C Reflow, Shock, and Vibration $\pm 50\text{ppm}$ or $\pm 100\text{ppm}$ Maximum	
<b>Output Voltage Logic High (<math>V_{OH}</math>)</b>	$I_{OH} = -8\text{mA}$	90% of $V_{DD}$ Minimum
<b>Output Voltage Logic Low (<math>V_{OL}</math>)</b>	$I_{OL} = +8\text{mA}$	10% of $V_{DD}$ Maximum
<b>Rise Time / Fall Time</b>	20% to 80% of waveform 2nSeconds Maximum	
<b>Duty Cycle</b>	at 50% of waveform 50 $\pm 5\text{(\%)}$	
<b>Load Drive Capability</b>	15pF HCMOS Load Maximum	
<b>Output Control Function</b>	Tri-State or Power Down	
<b>Output Control Input Voltage</b>	$V_{IH}$ of 70% of $V_{DD}$ Minimum or No Connection	Enables Output
	$V_{IL}$ of 30% of $V_{DD}$ Maximum	Disables Output: High Impedance State for Tri-state, Logic Low for Power Down
<b>Standby Current</b>	50 $\mu\text{A}$ Maximum	
<b>Peak to Peak Jitter (tPK)</b>	1.000MHz to 12.287999MHz	500pSec Maximum, 200pSec Typical
	12.288MHz to 125.000MHz	250pSec Maximum, 100pSec Typical
<b>Aging</b>	First Year at 25°C $\pm 1\text{ppm}$ Maximum	
<b>Start Up Time</b>	50mSec Maximum	

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EMK42	PLASTIC	2.5V	055J	11/07

## PART NUMBERING GUIDE

**EMK42 H 2 H - 50.000M TR**

### FREQUENCY TOLERANCE & STABILITY/ OPERATING TEMPERATURE RANGE

G= $\pm 100$ ppm Maximum over  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$   
H= $\pm 50$ ppm Maximum over  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$

### DUTY CYCLE

2=50%  $\pm 5\%$

### LOGIC CONTROL

H=Tri-State (High Impedance)  
J=Power Down (Logic Low)

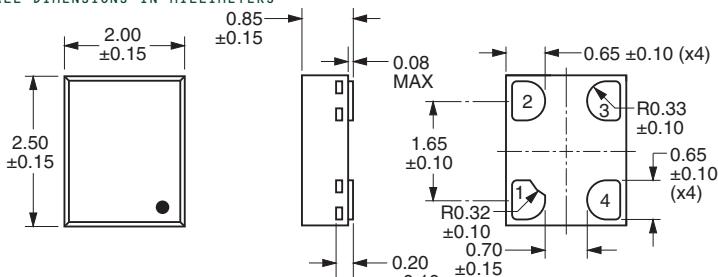
### AVAILABLE OPTIONS

Blank=Bulk  
TR=Tape and Reel (Standard)

### FREQUENCY

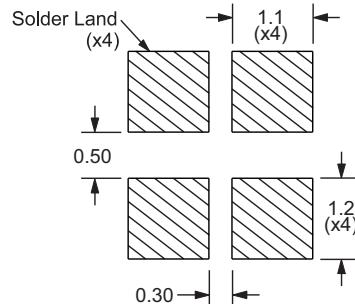
### MECHANICAL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



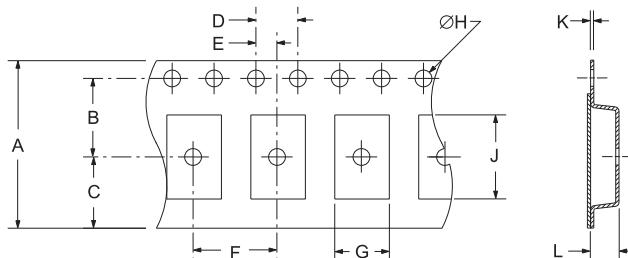
### SUGGESTED SOLDER PAD LAYOUT

ALL DIMENSIONS IN MILLIMETERS



### TAPE AND REEL DIMENSIONS

ALL DIMENSIONS IN MILLIMETERS



A	B	C	D	E
12.0 ±0.3	5.5 ±0.1	4.75 ±0.1	4.0 ±0.1	2.0 ±0.1
4.0 ±0.2	A0*	1.5 +1/-0	B0*	0.3 ±0.05

REEL	M	N	O	P	Q
R	1.5 MIN 2.5 MIN	50 MIN 10 MIN	20.2 MIN 18.4 MAX	13.0 ±0.2 180 MAX	40 MIN 12.4 +2/-0 1,000

\*Compliant to EIA 481C

### ENVIRONMENTAL/MECHANICAL SPECIFICATIONS

#### Characteristic

ESD Susceptibility  
Flammability  
Mechanical Shock  
Moisture Resistance  
Moisture Sensitivity Level  
Resistance to Soldering Heat  
Resistance to Solvents  
Solderability  
  
Temperature Cycling  
Thermal Shock  
Vibration

#### Specification

MIL-STD-883, Method 3015, Class 2, HBM: 2000V  
UL94-V0  
MIL-STD-883, Method 2002, Condition G, 30,000G  
MIL-STD-883, Method 1004  
J-STD-020, MSL 1  
MIL-STD-202, Method 210, Condition K  
MIL-STD-202, Method 215  
MIL-STD-883, Method 2003 (Four I/O Pads on bottom of package only)  
MIL-STD-883, Method 1010, Condition B  
MIL-STD-883, Method 1011, Condition B  
MIL-STD-883, Method 2007, Condition A, 20G

MEMS First™ is a registered trademark of SiTime Corporation.

### MARKING SPECIFICATIONS

Line 1: XXXX

Ecliptek Manufacturing Lot Code

MANUFACTURER	CATEGORY	SERIES	PACKAGE	VOLTAGE	CLASS	REV. DATE
ECLIPTEK CORP.	OSCILLATOR	EMK42	PLASTIC	2.5V	055J	11/07